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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,284	09/18/2003	Charles Leu		9037
25859	7590	08/23/2005		
WEI TE CHUNG FOXCONN INTERNATIONAL, INC. 1650 MEMOREX DRIVE SANTA CLARA, CA 95050			EXAMINER CALEY, MICHAEL H	
			ART UNIT 2871	PAPER NUMBER

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/666,284	<b>Applicant(s)</b> LEU ET AL.	
	<b>Examiner</b> Michael H. Caley	<b>Art Unit</b> 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 June 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 9-13 and 15-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-13 and 15-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Objections*

Claim 12 is objected to because of the following informalities:

“the light sources” lacks antecedent basis. Claim 9 as currently amended indicates only a single light source.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claim 15 is rejected under 35 U.S.C. 102(b) as being anticipated by Morohashi (U.S. Patent No. 4,267,489).**

Morohashi discloses a liquid crystal display having:

a backlight module having a plurality of light sources (Figure 1 elements 4 and 4') emitting light toward a diffusion plate (Figure 1 element 3), wherein

the diffusion plate defines at least first (Figure 2A element B) and second (Figure 2A element A) types of regions thereof, of which the first type of region faces a corresponding adjacent light source in a perpendicular manner while the second type of region faces one or more corresponding adjacent light sources in an oblique manner

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(Figure 2A), under a condition that a diffusion capability of the first type of region is greater than that of the second type of region (Column 2 line 58 – Column 3 line 6, Column 4 lines 1-12).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 9-12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morohashi in view of Yokoyama (U.S. Patent No. 5,899,552).**

Regarding claim 9, Morohashi discloses a liquid crystal display having:

a diffusion board (Figure 1 element 3) having an emitting surface and an incident surface opposite to the emitting surface; and

a light source (Figure 1 element 4) arranged behind the incident surface; wherein the diffusion board forms an ordinary diffusion section (Figure 2A element A) and an intensified diffusion section (Figure 2A element B) corresponding to the light source in shape and position, thereby eliminating a shadow image of the light source when viewed from the liquid crystal display.

Morohashi fails to disclose the intensified diffusion section as having a refractive index higher than that of the ordinary diffusion section. Yokoyama, however, teaches an alternative

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method of varying the scattering power of individual diffusion sections of a diffusion board by varying the refractive index of the individual sections (Column 15 lines 55-60, Column 16 line 60 – Column 17 line 53).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the diffusion board disclosed by Morohashi such that the intensified diffusion section have a refractive index higher than that of the ordinary diffusion section. One would have been motivated to form the intensified diffusion sections of a material having a higher refractive index than that of the ordinary diffusion section to benefit from the improved scattering properties of sections having differing refractive indexes as taught by Yokoyama. For example, Yokoyama teaches reflection elements as disclosed by Morohashi as insufficient to achieve an optimal level of scattering (Column 1 lines 20-45). Yokoyama further teaches the method of changing refractive index of diffusion sections as advantageous to simplify construction and make the diffusion board adaptable to larger sized devices and mass production (Column 4 line 64 – Column 5 line 2).

Regarding claim 10, Morohashi fails to disclose the intensified diffusion section as formed by providing scattering particulates having a different refractive index, thereby having a higher diffusion capability as compared with the ordinary diffusion board section. Yokoyama, however, teaches such scattering particulates having a different refractive index and higher diffusion capability as compared with the ordinary diffusion board (Column 16 lines 40-50).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the diffusion board disclosed by Morohashi such that the intensified diffusion

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section have scattering particulates having a refractive index higher than that of the ordinary diffusion section. One would have been motivated to form the intensified diffusion sections of a material having a higher refractive index than that of the ordinary diffusion section to benefit from the improved scattering properties of sections having differing refractive indexes as taught by Yokoyama. For example, Yokoyama teaches reflection elements as disclosed by Morohashi as insufficient to achieve an optimal level of scattering (Column 1 lines 20-45). Yokoyama further teaches the method of changing refractive index of diffusion sections as advantageous to simplify construction and make the diffusion board adaptable to larger sized devices and mass production (Column 4 line 64 – Column 5 line 2).

Regarding claim 11, Morohashi discloses a light enhancing plate to intensify the luminance emitted from the light guide (Figure 1 element 2).

Regarding claim 12, Yokoyama discloses the light sources as provided with a reflector (Figure 1 element 5).

Regarding claim 16, Morohashi fails to disclose the scattering material as formed by polymethyl methacrylate having a grain size ranging from 5 to 30 micrometers. Yokoyama, however, discloses a table of possible materials to be used as a particle material (Columns 16 and 17) including polymethyl methacrylate (PMMA) and a preferred range of particle sizes overlapping the proposed range.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the scattering material from the material and grain size as proposed. Yokoyama teaches such specifications for the particle as within conventional ranges for such an application. One would have been motivated to use the material and grain size as proposed as an engineering expediency to achieve the expected results of such a particle such as a particular scattering characteristic.

**Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morohashi in view of Yokoyama and in further view of Tanaka et al. (U.S. Patent No. 5,550,657 “Tanaka”).**

Morohashi as modified by Yokoyama fails to disclose the reflector as further comprising a reflecting film to increase the light reflected therefrom. Tanaka, however, teaches such a reflecting film (Figure 3 elements 24A and 24B; Column 7 line 66 – Column 8 line 6) to improve the reflective efficiency of such reflectors to near 100%).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed reflecting films on the reflector as proposed. One would have been motivated to form such reflecting films to increase the efficiency of the light source and the brightness of the display.

**Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morohashi in view of Yokoyama and in further view of Ariyoshi et al. (U.S. Patent Application Publication No. 2003/0072080 “Ariyoshi”).**

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Morohashi as modified by Yokoyama discloses grain size of the scattering particulate, but fails to disclose the scattering material as formed as a melamine resin. Ariyoshi, however, teaches melamine-based fine particles as conventionally combined with a transparent medium of a different refractive index to form a light scattering sheet analogously to the device disclosed by Yamamoto.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the scattering material from the material and grain size as proposed. Yokoyama and Ariyoshi teach such specifications for the particle as within conventional ranges for such an application. One would have been motivated to use the material and grain size as proposed as an engineering expediency to achieve the expected results of such a particle such as a particular scattering characteristic.

#### ***Response to Arguments***

Applicant's arguments filed 6/9/05 with respect to claims 9-13 and 15-17 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael H. Caley whose telephone number is (571) 272-2286. The examiner can normally be reached on M-F 8:30 a.m. - 5:00 p.m..



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael H. Caley

August 17, 2005

  
mhc

  
**ROBERT KIM**  
**SUPERVISORY PATENT EXAMINER**